

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. In the specification

A. Amendment to the specification

The specification is amended, as shown in the foregoing AMENDMENT TO THE SPECIFICATION, to correct minor informalities in the abstract pointed out in the Office action. It is respectfully submitted that no new matter is added, as the changes simply correct minor informalities.

Entry of the AMENDMENT TO THE SPECIFICATION is respectfully requested in the next Office communication.

B. Objection to the specification (abstract)

Reconsideration and removal of the objection to the abstract is respectfully requested, in view of the amendments to the abstract discussed above, on the basis that the minor informalities pointed out in the Office action have been corrected.

Accordingly, removal of this objection is respectfully requested.

2. Rejection of claims 1 and 3 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent no.6,951,375 (*Patton et al.*)

Reconsideration of this rejection is respectfully requested, on the basis that the *Patton* patent fails to disclose each and every recited element of pending claim 1. Pending claims 3-6 depend from claim 1, and are therefore patentable as containing all of the recited elements of claim 1, as well as for their respective recited features.

By way of review, the embodiment of pending claim 1 requires a laser marking device that irradiates a laser beam on a workpiece in order to transform a portion inside the workpiece at a focal point of the laser beam, thus putting a dot in a predetermined area. The laser marking means performs the marking using three-dimensional coordinates as a laser beam focal point. A coordinate setting means

calculates, for each dot, dot depth information, as one of the three-dimensional coordinates, showing the distance from the surface of the workpiece to the dot in the thickness direction of the workpiece.

In contrast, the *Patton* patent fails to disclose a laser marking device that irradiates a laser beam on a workpiece in order to transform a portion inside the workpiece at a focal point of the laser beam, thus putting a dot in a predetermined area, as required by pending claim 1. The *Patton* patent also fails to disclose a coordinate setting means that calculates, for each dot, dot depth information showing the distance from the surface of the workpiece to the dot in the thickness direction of the workpiece, as required by pending claim 1.

The *Patton* patent is directed to a method and apparatus for *printing* an image on a large surface or walkway (abstract; col. 2, lines 28-29, 41-42; col. 4, lines 3-7). Specifically, a marking engine 23 has a thermo-mechanically activated Drop on Demand print head 24, which may be a piezoelectric or other type of inkjet print head (col. 4, lines 11-17). Reservoirs 45a-d contain marking solutions 50a-d, which can be dyes, inks, paint, or pigments (col. 4, lines 25-30). The marking solutions are used to form a permanent or temporary visible image (col. 4, lines 29-30).

Thus, in contrast to the embodiment of pending claim 1, an image is formed on the surface or walkway by use of marking solutions. This configuration is clearly different from the configuration of pending claim 1, which requires a laser marking device that irradiates a laser beam on a workpiece in order to transform a portion inside the workpiece at a focal point of the laser beam, thus putting a dot in a predetermined area.

To begin with, the use of inkjet print heads is clearly different from a laser marking system. Additionally, the inkjet print head merely places an image on the surface of the walkway (col. 6, lines 21-27), and does not transform a portion inside the workpiece to put a dot in a predetermined area. Further, since the image is placed on the surface of the walkway, there is no coordinate setting means that calculates dot

depth information showing the distance from the surface of the workpiece to the dot in the thickness direction of the workpiece.

While the *Patton* patent does disclose the use of a scanning laser system (col. 11, lines 40-43), the scanning laser is used only to control the marking engine 23 (col. 11, lines 53-54), and not to transform an inside portion of the workpiece to create a dot, as required by pending claim 1, or as a mechanism for calculating the distance to a dot from the surface of the workpiece.

Accordingly, since the *Patton* patent fails to disclose a laser marking device that irradiates a laser beam on a workpiece in order to transform a portion inside the workpiece at a focal point of the laser beam, thus putting a dot in a predetermined area, and a coordinate setting means that calculates, for each dot, dot depth information showing the distance from the surface of the workpiece to the dot in the thickness direction of the workpiece, as required by pending claim 1.

Withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 1 is patentable and therefore, claims 3-6, which depend from claim 1, are also considered to be patentable as containing all of the elements of claim 1, as well as for their respective recited features.

3. Rejection of claims 4-7 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no.6,951,375 (*Patton et al.*) in view of U.S. publication no. 2003/0219577 (*Tait et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to claims 4-7.

With respect to claims 4-6, the *Tait* publication fails to provide for the deficiencies of the *Patton* patent, as discussed above with respect to claim 1, from which claims 4-6 depend.

Specifically, the *Tait* publication fails to disclose a laser marking device that irradiates a laser beam on a workpiece in order to transform a portion inside the workpiece at a focal point of the laser beam, thus putting a dot in a predetermined area, as required by pending claim 1.

While the *Tait* publication discloses the use of a laser used to cut an optical film (paragraph [0030]), the laser does not transform an inside portion of a workpiece to create a dot, as required by pending claim 1, but instead vaporizes the film body along a cut line or otherwise is transmitted or reflected by the film (paragraph [0030]).

This deficiency of the *Tait* publication is also applicable to pending claim 7, which requires marking to occur such that a plurality of dots are formed inside the workpiece at different depths. There is simply no discussion in the *Tait* publication of the use of a laser to create such marking.

Further, a skilled artisan would not have been motivated to combine the teachings of the *Patton* patent and the *Tait* publication, since the *Patton* patent is drawn to a device and method for printing an image on a large surface and the *Tait* publication is drawn to the creation and cutting of optical films without causing delamination. There is simply no nexus between the *Patton* patent and the *Tait* publication that would have caused a skilled artisan to utilize the teachings of the *Patton* patent and the *Tait* publication together. The *Patton* patent and the *Tait* publication are not in the same field of endeavor, do not involve solutions to the same or similar problems, and are simply too divergent for a skilled artisan to have considered together.

Additionally, there is no reasonable expectation of successfully combining the teachings of the *Patton* patent and the *Tait* publication. The *Patton* patent utilizes a printing device that is designed to be supported upon and print on the surface of a walkway, such as a driveway or sidewalk. Thus, the printing device is substantial in mass and size. On the other hand, the optical film of the *Tait* publication could not possibly support the printing device of the *Patton* patent, due to the thin film characteristics of the optical films described. Accordingly, there is no reasonable

expectation of successfully utilizing the printing device of the *Patton* patent to print an image upon the optical film of the *Tait* publication.

Accordingly, since the combination of the *Patton* patent and the *Tait* publication fails to disclose every element of pending claims 4-7, sine a skilled artisan would not have been motivated to combine the teachings of the *Patton* patent and the *Tait* publication, and since there is no reasonable expectation of successfully combining the teachings of the *Patton* patent and the *Tait* publication, a *prima facie* case of obviousness cannot be maintained, and withdrawal of this rejection is respectfully requested.

4. Allowable subject matter

The applicant gratefully acknowledges the indication of allowability of claims 2 and 8-12.

With respect to the statement of reasons for allowance on page 7 of the Office action, line 2 of the first full paragraph states that “an object to be marked” includes various elements of the indicated claims, including “a marking information setting means...”. Since, in the claims, it is actually the laser marking device that includes the marking information setting means and the various other recited elements, it is believed that this statement is in error.

Accordingly, revision or clarification of the statement of reasons for allowance is respectfully requested in the next Office communication.

Application No.: 10/578,249
Examiner: Al Hashimi, Sarah
Art Unit: 2853

5. Conclusion

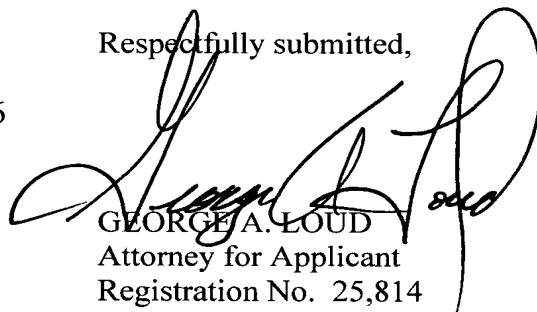
In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicant's attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,



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